DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MEDICAL COMMAND
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FORT SAM HOUSTON TX 78234-6000

REPLY TO
ATTENTION OF

MCPO-SA

OTSG/MEDCOM Policy Memo 05-003

04 MAR 2005

Expires 4 March 2007

MEMORANDUM FOR Commanders, MEDCOM Major Subordinate Commands

SUBJECT: Medical Management of Army Personnel Exposed to Depleted Uranium (DU)

1. References. See Annex 1 to the enclosure.

2. Purpose. To clarify established policy, expand responsibilities and procedures, and provide additional guidance for the medical management of Army personnel exposed to DU (enclosure).

3. Proponent. Proponency Office for Preventive Medicine, San Antonio, COL Robert R. Eng.

4. Details.

a. This policy supersedes OTSG/MEDCOM Policy Memo 03-007, 13 Jan 04, subject: Medical Management of Army Personnel Exposed to Depleted Uranium (DU) (reference 4, Annex 1).

b. This policy directs the implementation of the 9 Apr 04 Department of Defense Health Affairs memorandum and the 30 May 03 Department of Defense Health Affairs Policy 03-012, for Operation Iraqi Freedom Depleted Uranium (DU) Medical Management (references 1 and 2, respectively, Annex 1), supports the 6 Feb 04 Department of Defense Health Affairs Policy 04-004 for Biomonitoring Policy and Approved Bioassays for Depleted Uranium and Lead (reference 3, Annex 1), and provides further policy, responsibilities, procedures, and guidance for the medical management of patients exposed to DU.

c. All personnel with actual or potential exposures to DU will continue to be identified, assigned a potential exposure level (I, II, or III), assessed, and treated (if needed). The identified personnel will then be monitored and tracked according to the responsibilities, procedures, and guidance provided in the enclosure.

d. Required medical treatment or evaluations shall not be delayed because of the possible presence of DU on skin or clothing, for the determination of the presence of DU on a patient, or for DU bioassay specimen collection.

e. DU bioassays will be administered to all personnel with imbedded metal fragments that might include DU or who were in, on, or near (less than 50 meters) an armored vehicle at the time (or shortly after) it was struck with a DU munition (Level 1 exposure category).

f. DU bioassays will be administered to all personnel who routinely enter damaged vehicles as part of their military occupation or who fight fires involving DU munitions (Level II exposure category).

g. DU bioassays are not required for personnel with incidental exposure to DU, although a physician may choose to perform one based on medical indications or on the potentially exposed individual's request (Level III exposure category).

h. This policy eliminates the requirement to collect urine specimens in Theater for DU bioassay.

i. The case management process has worked well to provide potentially exposed Soldiers with one-on-one health risk communication and information related to any results from DU bioassays. Annex 2 to the enclosure recommends the assignment of a case manager for Soldiers submitting urine specimens for DU bioassay.

FOR THE COMMANDER:

JOSEPH G. WEBB, JR.
Major General, DC
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Encl
as

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MCPO-SA
SUBJECT: Medical Management of Army Personnel Exposed to Depleted Uranium (DU)

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Procedures/Guidance for the Medical Management of Army Personnel Exposed to Depleted Uranium
1 Nov 04

1. References. See Annex 1 to this Enclosure.

2. Responsibilities. Annex 2 to this Enclosure defines the responsibilities for Army medical personnel.

3. General.

a. The procedures in this document will be used to identify, assign a potential exposure level (I, II, or III), assess, and treat (if needed) all personnel with actual or potential exposures to DU. In addition, these procedures detail required monitoring and tracking of all Army personnel with retained metal fragments (including DU) and/or suspected inhalation or incidental exposure to DU.

b. The following procedures will also be used to ensure the appropriate use of urine bioassay for DU exposure assessment and biomonitoring.

c. Annex 3 to this Enclosure contains a short questionnaire to assist the healthcare provider in assessing potential DU exposure. Annex 4 to this Enclosure provides the Department of Defense (DD) Form 2872 Test DU Questionnaire and DD Form 2872-1 Test, Health Survey, which must be completed for all personnel submitting specimens for DU bioassays. Annex 5 provides packing and shipping requirements for DU bioassay specimens. Annex 6 to this Enclosure summarizes these procedures in a checklist format for healthcare providers. Annex 7 summarizes these procedures in a flow chart format. Annex 8 is a copy of the Deployment Health Clinical Center provider flow chart used in the Clinical Practice Guidelines for post-deployment health.

d. Medical units located in a Theater of Operations are not required to collect urine specimens for DU bioassay. This policy should not be taken to preclude collection of urine specimens at a physician's order; however, capability to collect, store, process and ship these specimens may be extremely problematic. Higher echelon medical facilities acting as enroute processing points for redeploying Soldiers are not required to collect specimens on those Soldiers; however, when a urine specimen for DU bioassay is required, based upon the potential DU exposure level discussed below, the medical treatment facility (MTF) should document on the DD Form 2796, Post-Deployment Health Assessment, and other medical records (e.g., DD Form 2766, sections 5 and 7 (block 20)) that a 24-hour urine specimen for DU bioassay should be collected by the Soldier's home station MTF.

4. Definitions of potential DU exposure levels.

a. **Level I.** Personnel Struck by DU Munitions or Who Were In, On or Near (less than 50 Meters) a Combat Vehicle at the Time (or Shortly After) it was Struck with DU Munitions.

(1) Personnel in this Level may exceed occupational safety levels when a sufficient amount of DU is taken into an individual's body. This level includes personnel who were struck by DU munitions or who were in, on or near (less than 50 meters) a combat vehicle struck by DU munitions or DU armor when it is breached by any munitions and to first responders who entered these vehicles to render aid to the crewman, or to those with retained fragments that contain DU.

(2) DU bioassays will be administered to all personnel within this Level. After more than a decade of medical surveillance of the 1991 Gulf War survivors of DU-related injuries, no adverse toxicological effects related to the presence of DU have been identified (McDiarmid et al., 2004, reference 23, Annex 1 to this enclosure). As of September 2004, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) had evaluated approximately 1355 urine uranium bioassay results from Operation Iraqi Freedom (OIF) Soldiers. The majority of these results (92.5%) have been < 50 nanograms (ng) of uranium (U) per liter (L). There were approximately 100 specimens (7.4%) with an initial value >50 ng U/L; however, only 2 (0.1%) have been confirmed as DU at that level. A value of 46 ng U/L urine is the 95th percentile for the U.S. population aged 6 years and older as reported in the Centers for Disease Control and Prevention, National Center for Environmental Health, Second National Report on Human Exposure to Environmental Chemicals, National Health and Nutrition Examination Surveys, Jan 03 with Mar 03 revisions (NHANES). The values reported in the NHANES Report have no prognostic value; they are not associated with any adverse health effects (reference 5, Annex 1 to this enclosure).

(3) Bioassays should be performed as soon as medical condition permits a urine collection at an Echelon IV or V facility. Non-hospitalized Level I personnel will have their medical records annotated that a 24-hour urine collection is required and these bioassays will be performed as soon as possible (e.g., upon return to home station).

b. **Level II.** Personnel Who Routinely Enter DU Damaged Vehicles as a Part of Their Military Occupation or Who Fight Fires Involving DU Munitions.

(1) Personnel in this Level may exceed occupational safety levels when a sufficient amount of DU is taken into an individual's body. This Level includes personnel who routinely enter vehicles containing DU dust to perform maintenance and recovery operations (other than first responder), intelligence operations, or battle damage assessment. This level also includes personnel whose occupation involves fire fighting involving DU munitions.

(2) DU bioassays will be administered to all personnel within this Level. Specimen collection should be done as soon as possible. The type of personal protective equipment worn during potential DU exposure situations should be annotated in the remarks section of the DoD DU questionnaire.

(3) Bioassays should be obtained on a priority basis after each potential exposure; however, resources to collect and process specimens in a Theater of Operations may be extremely limited, necessitating later collection. Medical records must be annotated (e.g., DD Form 2766, sections 5 and 7 (block 20) with the requirement to collect a 24-hour urine specimen for DU bioassay.

c. **Level III.** Personnel with "Incidental" exposures to DU.

(1) Examples of personnel in this level include individuals who have driven through smoke from a fire involving DU munitions or who have entered or climbed on or in a battle damaged vehicle on an infrequent basis (not as a first responder and not as a job requirement to enter vehicles that may have been contaminated with DU).

(2) Bioassays are not required for personnel in this level, though a physician may choose to perform one based on medical indications or on the potentially exposed individual's request. If the individual indicates that he was cut, scraped, or sustained a puncture type wound while in, on or around a potentially contaminated vehicle, then it is strongly recommended that a urine bioassay be ordered. The individual may have an embedded fragment that contains DU. NOTE: Paradoxically, this group may require more health risk communication than those in Levels I and II. Level I personnel may know they have retained fragments or were potentially exposed to a relatively high level of DU while those in Level III may have various signs and symptoms not attributable to a single cause and so feel that DU may be the causative agent.

5. Treatment considerations for wounded personnel with suspected DU exposure.

a. Standard procedures for treating wounded personnel will be followed.

(1) Embedded fragments should be removed using standard surgical criteria (reference 10, Annex 1, provides guidance) except that large fragments (greater than 1 cm) should be more aggressively removed unless the medical risk to the patient is too great. The short-term consequences of retained DU fragments do not justify an aggressive approach during the early treatment of wounds. Appropriate treatment of the wound with removal of any easily accessible fragments should be performed. In the care of acute wounds, surgical judgment should be used to avoid the risk of harm in removal of other fragments, even when known to be DU. DU fragments may always be removed at a later date.

(2) Monitoring of kidney function is recommended for patients who have contaminated wounds or embedded depleted uranium fragments. Monitoring should

follow the current protocol in use by the Baltimore Veterans Affairs (VA) Depleted Uranium Program.

(a) As with all heavy metals, the kidney is one of the organs most sensitive to uranium toxicity. The VA protocol recommends the following kidney function tests: urinalysis, 24-hour urine for uranium bioassay, blood urea nitrogen (BUN), creatinine, beta-2-microglobulin, and creatinine clearance.

(b) Chelation therapy is not recommended based upon current estimates of depleted uranium exposure health effects.

b. Required medical treatment or evaluations shall not be delayed because of the possible presence of DU on skin or clothing, for the determination of the presence of DU on a patient, or for DU bioassay specimen collection.

c. The presence of DU fragments in a patient's body presents no risks to healthcare providers or other individuals. As with other heavy metals retained in the body. DU in all body fluids (urine, blood, sweat, saliva, and semen), tissues, and excrement (feces) is not categorized as hazardous material/waste and no special precautions related to DU are required for handling or disposal.

d. Specimens for urine DU bioassays may be obtained in a Theater of Operations in emergency situations or under medical orders even though not required by this policy. Specimens may be collected during redeployment/demobilization in CONUS when feasible and when the patient's clinical condition permits; however, specimen collection must occur at home station if not accomplished and documented during redeployment/ demobilization.

6. Identifying personnel with potential exposure to DU during deployments. Assistant Secretary of Defense, Health Affairs (ASD(HA)) guidance (reference 1, Annex 1 to this enclosure) reminds all Services of the requirement to identify potential DU exposures in various ways including unit/personnel mission and post-deployment assessments. Tier 1, DU awareness training (reference 8, Annex 1) requires notification of DU-related incidents through command channels. Health Care Providers, too, have a major role in the identification process.

a. Identifying personnel with potential exposure to DU during deployments becomes critical when potentially exposed personnel will continue to be deployed longer than 180 days after a suspected exposure. Urine specimens collected more than 180 days after exposure remain valid for Level I exposures but may not support the documentation of Level II and Level III exposures to DU; however, urine specimens will be collected on all Level I and Level II personnel potentially exposed to DU regardless of the length of time since exposure. A Level III potentially exposed Soldier does not require DU bioassay; however, a physician may choose to perform one based on medical indications or on the potentially exposed individual's request.

b. Indicators of potential exposure. There are several indicators of potential exposure to DU above the current peacetime occupational levels.

(1) Indicators of DU exposure that may be obtained directly from the patient or the patient's field medical card include:

(a) Patient's vehicle was struck by a Kinetic Energy (KE) munition. (KE munitions are made from either tungsten or depleted uranium.)

(b) Patient's vehicle was struck by DU munitions either from US tanks or aircraft.

(c) Patient reports he saw burning fragments (like a Fourth of July sparkler) while the vehicle was being penetrated. (Depleted uranium is pyrophoric [i.e., may ignite spontaneously in air] and can ignite when fine particles are formed.)

(d) Patient was a first responder and entered the vehicle to rescue or evacuate personnel, or retrieve sensitive material, immediately after the vehicle was struck.

(e) Patient was wounded by DU munitions. Similar to lead, tungsten, and steel, DU fragments are readily visible on x-ray. Radiography alone, however, is not sufficient to determine the presence or absence of depleted uranium. If readily available, a RADIAC meter (AN/VDR-2 with the beta shield open or equivalent) may be used to monitor surgically removed fragments, wounds, burns, surfaces, or sites with suspected DU contamination or embedded fragments. This will indicate the likely presence of depleted uranium and can assist in wound cleaning or surface decontamination. **Under no circumstances should medical treatment be delayed to obtain an AN/VDR-2.**

(2) It is unlikely that environmental measurements or dose assessments will be available in all situations, especially in combat. However, if field survey monitoring indicates the presence of radioactive material on the patient, or in the vicinity of his activities when injured, then include the survey results, the time and date of the survey, and the type and serial number of the RADIAC meter and detection probe on the field medical card or other patient records. The clinician should alert preventive medicine if other individuals have been exposed so that an exposure assessment can be performed.

c. Suspected DU exposure.

(1) If DU exposure is suspected at Health Service Support (HSS) Echelons I and II, medical personnel should annotate the Field Medical Card (DD Form 1380), Block 13 (Diagnosis) or patient's clinical record (SF 504 or other) with the statement: "SUSPECTED DEPLETED URANIUM (DU) EXPOSURE", and the time, date, and other pertinent information (e.g., in Block 9 state the circumstances of "What was he doing

when injured?"). Designated individuals or elements organic to combat and combat support units provide medical care at HSS Echelon I. This may include self-aid or buddy aid, the combat lifesaver, the combat medic, and the battalion aid station. Echelon II, for non-wounded personnel, provides medical care at the division or corps clearing station.

(2) If DU exposure is suspected at HSS Echelons III and IV, medical personnel should record the information in the medical record on the DD Form 2766 and code the information into the Ambulatory Data Management (ADM) (previously called Ambulatory Data System (ADS)) and the Composite Healthcare System (CHCS). A hospital staffed and equipped to provide resuscitation, initial wound surgery, and post-operative treatment provides the care is Echelon III. A hospital staffed for general and specialized medical and surgical care and rehabilitation for RTD provides the care at Echelon IV.

(3) For personnel who are suspected of having exposure to DU and who are not expected to re-deploy within 180 days of the suspected exposure, DU exposure levels (I-III) must be assigned and documented and bioassay procedures should begin for Level I and II personnel. While bioassay procedures need not be instituted in-Theater or at intermediate stops enroute to CONUS (e.g., Landstuhl, Germany, or redeployment/demobilization stations), medical records must document the need for follow-up bioassay. Annotations in medical records must be sufficiently clear so that subsequent reviews (e.g., home station) will produce the necessary bioassay actions.

(4) The healthcare provider (HCP) or Primary Care Manager (PCM) at the echelon of care at which fragment and/or urine specimens are collected from Level I and II personnel will complete the DD Form 2872, DU Questionnaire and DD Form 2872-1, Health Survey or overprinted SF 600, when made available from ASD(HA). The original DU Questionnaire is placed in the individual medical record and a copy is sent along with any fragment or urine specimens going to the USACHPPM for analysis.

d. Specimens for urine DU bioassays should be obtained when operationally feasible and when the patient's clinical condition permits; however, such delays should not prevent eventual specimen collection.

e. Exposure situations include both known DU exposure, as well as potential DU exposure, based upon proximity to a blast or fire involving a DU projectile or DU armor.

7. Post-deployment screening for actual or potential exposure to DU.

a. The initial HCP will identify Army personnel with retained metal fragments and suspected inhalation or incidental exposure to DU. The initial HCP does this by:

(1) Reviewing and ensuring the completion of the DD Form 2796 (http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd2796.pdf) for all redeploying/demobilizing Soldiers.

(2) Identifying wounded individuals and individuals with suspected DU exposure who provided a positive response on the DD Form 2796 (Apr 03), Post-Deployment Health Assessment, to Questions 14, 17 or 18 regarding potential DU exposure.

(3) Using the short exposure assessment questionnaire provided in Annex 3 to complete the potential exposure assessment; assigning a DU potential exposure level (I, II, or III); and determining the need for bioassay for potentially exposed Soldiers,.

(4) Documenting the assigned level (Level I-III) of potential DU exposure on the DD Form 2796.

(5) Referring all individuals assigned a Level I or Level II potential DU exposure to their PCM at the Medical Treatment Facility (MTF) for further assessment and a 24-hour urine uranium analysis as soon as possible. The level of exposure and referral, if indicated, will be documented on the DD Form 2796 and in the individual health record on the DD Form 2766 and transferred into the permanent medical record during reconciliation/update.

b. The HCP or PCM at the MTF at which fragment and/or urine specimens are collected from Level I and II personnel will complete the DD Form 2872, DU Questionnaire and DD Form 2872-1, Health Survey or overprinted SF 600, when made available from ASD(HA). The original DU Questionnaire is placed in the individual medical record and a copy is sent along with any fragment or urine specimens going to the USACHPPM for analysis.

8. Bioassay specimen collections and management.

a. Metal fragments removed from Level I patients.

(1) Metal fragments removed from Level I patients will be considered clinical laboratory specimens and forwarded to USACHPPM for composition analysis. Information provided with the fragment specimen shall include: a completed Standard Form 557, Miscellaneous, with the ordering physician's contact information; the injury date; and the date the fragment was removed from the patient. A copy of the completed DoD DU Questionnaire will accompany all metal fragments sent to USACHPPM for analysis.

(2) Documentation accompanying each metal fragment specimen should indicate if it is suspected that similar fragments remain embedded in the patient. Also helpful would be to know if any urine bioassays were collected from the patient, before or after fragment removal. If urine bioassay were collected, then the dates and times of collection need to be provided.

(3) The local medical laboratory will maintain a roster of metal fragment specimens shipped with patient identification. The local medical laboratory will receive the results and is responsible for ensuring that results are entered into the individual's

medical record and into the local automated clinical information system (e.g., CHCS). Non-DU fragments can be returned to the requesting MTF upon request. NOTE: USACHPPM will soon become a satellite user of CHCS. Upon completion of that action, requests for DU bioassay may be submitted on line and the results will be posted similar to current standard medical tests.

b. Urine specimens.

(1) The HCP or PCM at the supporting MTF will refer all Army personnel assigned a Level I or II DU potential exposure category to the clinical laboratory for 24-hour urine specimen collection.

(a) A 24-hour urine specimen results in a more accurate dose estimate than would result from a spot urine specimen and will provide sufficient volume for additional analyses when required.

(b) A 24-hour urine specimen is required for subsequent AMEDD and DVA follow-up for all Level I and II exposure category personnel who are in-patients.

(c) Post-exposure urine specimens should be collected within 180 days of suspected DU exposure. Because deployments may last longer than 180 days, collection may be deferred until redeployment. Urine specimens collected more than 180 days after exposure remain valid for Level I exposures but may not support the documentation of Level II and Level III exposures to DU. In accordance with DoD policy, an identified Level II Soldier will have a urine specimen collected; a Level III potentially exposed Soldier does not require DU bioassay; however, a physician may choose to perform one based on medical indications or on the potentially exposed individual's request.

(2) The local clinical laboratory will collect and manage 24-hour urine specimens according to the following procedures:

(a) The specimens will be collected using the containers specified in Annex 5.

(b) Instruct the patient to collect urine beginning after first morning void of Day 1 and end collection after first morning void of Day 2 (the next day). Document the beginning time, the ending time and the total volume of this 24-hour collection.

(c) After an aliquot is taken from it for a creatinine test, the 24-hour urine specimen will be packaged for shipment to USACHPPM.

(d) All 24-hour urine specimens for DU bioassay will be forwarded to USACHPPM following the guidance in Annex 5. Each urine specimen will be shipped with a completed Standard Form 557, Miscellaneous, a copy of the completed DoD DU Questionnaire, a copy of the Health Survey, and results of the urine creatinine analysis.

Information on the patient's age, sex, height, weight, and potential exposure level (I, II or III) should also be furnished.

(3) The laboratory will also complete a urine creatinine analysis on an aliquot from each 24-hour specimen. For measurement of urine creatinine level, the patient's age, sex, height, weight, and potential exposure level (I, II or III) must be provided on the laboratory request, Standard Form 557, Miscellaneous. NOTE: USACHPPM will soon become a satellite user of CHCS. Upon completion of that action, requests for DU bioassay may be submitted on line and the results will be posted similar to current standard medical tests.

c. All laboratories that collect or receive specimens will maintain a registry of specimens (fragments and urine).

9. Laboratory procedures.

a. The USACHPPM Directorate of Laboratory Services will provide Army bioassay and metal fragment identification services. All specimens (metal fragments and urine) will be sent to USACHPPM.

b. The MEDCOM Health Policy & Services Directorate, Ancillary Health Services Division, will provide staff oversight of the clinical laboratory support for the collection, identification, and processing of urine specimens for DU bioassay, extracted fragments for proper identification of the metal, and measurement of creatinine in urine as part of the DU bioassay effort.

c. USACHPPM will report results of fragment analysis and urine bioassay results to the MTF laboratory that submitted the sample with interpretation and comparison to referent norms as appropriate. All urine bioassay results will be reported normalized to creatinine (e.g., micrograms of uranium per nanogram creatinine) and normalized to the volume of the urine specimen (e.g., micrograms uranium per liter of urine). In addition, USACHPPM will send all remaining urine from CHPPM analyzed specimens to AFIP for archiving.

(1) This action will be completed expeditiously using USACHPPM approved internal procedures; however, if there is an unexpected increase in submitted specimens for DU bioassay, then USACHPPM may coordinate with the Armed Forces Institute of Pathology (AFIP) or the Centers for Disease Control and Prevention (CDC) for assistance.

(2) Records will be maintained that support not only the analytical results but also the transmittal of those results to the requesting MTF.

d. The laboratory receiving the results from USACHPPM will ensure that the results are routed appropriately in order to be placed in the affected individual's medical record and into the local automated clinical information system (e.g., CHCS). NOTE:

USACHPPM will soon become a satellite user of CHCS. Upon completion of that action, requests for DU bioassay may be submitted on line and the results will be posted similar to current standard medical tests.

e. The USACHPPM Radiologic, Classic and Clinical Laboratory Division, provides consultations on DU bioassay specimen collection, preservation, shipment; and laboratory support, contact number is (410) 436-3983 or DSN 584-3983. The USACHPPM Health Physics Program interprets laboratory results and provides bioassay interpretation reports, with assistance from the Occupational Medicine physicians in the Directorate of Occupational and Environmental Medicine. The USACHPPM Health Physics Program may be reached at (410) 436-3502 or DSN 584-3502. During non-duty hours, USACHPPM assistance may be obtained using the USACHPPM Emergency Contact Numbers at (800) 222-9698 or (888) 786-8633.

10. Health risk communication.

a. A critical component of the DOD strategy for the medical management of DU exposures is health risk communication. The healthcare provider is the key individual in this activity. The healthcare provider must inform the patient about the results of the DU bioassay, and ensure that this communication and the health risk assessment and its interpretation are documented in the medical record. The healthcare provider must also discuss any need for additional medical follow-up.

b. Information is available to help the healthcare provider effectively communicate the DU exposure assessment and its interpretation to the patient.

(1) Fact sheets for healthcare providers and Soldiers which explain potential DU exposure and health implications can be found at http://chppm-www.apgea.army.mil/doem/PostDepExpFS.aspx. (NOTE: The DU Fact Sheet numbers are 65-050-0503 for the individual and 65-051-0503 for the HCP.) Other useful information includes the USACHPPM Fact Sheet entitled Urine Testing for Depleted Uranium, May 2004 at https://chppm-www.apgea.army.mil/documents/UrineTesting.pdf and DHCC web page on DU which contains DU policies, forms, fact sheets, and clinical guidance http://www.pdhealth.mil/du.asp

(2) The DOD Health Affairs Policy 03-012 (reference 2, Annex 1) also contains information and references for healthcare providers to help in communication with patients.

(3) Information and consultation on ionizing radiation dosimetry, dose estimation, and ionizing radiation health risk implications of DU exposure are available from the USACHPPM Health Physics Program at (410) 436-3502 or DSN 584-3502. During non-duty hours, USACHPPM assistance may be obtained using the USACHPPM Emergency Contact Numbers at (800) 222-9698 or (888) 786-8633.

(4) Information and consultation on potential chemical and radiological health risks of DU; need for medical treatment, long-term medical surveillance, and follow-up are available from the USACHPPM Environmental Medicine Program at (410)436-2724, or DSN 584-2714.

c. Normal values.

(1) There are no current US population reference values for DU in urine. There are current US population reference levels for uranium.

(2) The United States Nuclear Regulatory Commission (NRC) has set an action level for uranium in urine to protect workers occupationally exposed to uranium. This urine uranium level is 15 micrograms/liter (^{238}U), which is well above the 95th percentiles for urine uranium levels given in Centers for Disease Control and Prevention, National Center for Environmental Health, Second National Report on Human Exposure to Environmental Chemicals, National Health and Nutrition Examination Surveys (NHANES), Jan 03 with Mar 03 revisions.

(3) The NHANES II report notes that it is unknown if the population urine uranium levels reported in the NHANES 2003 data represent cause for health concern and state that more research is needed. The NHANES 2003 geometric mean is 0.007 micrograms/liter urine in the sample of the US population of 2464 individuals 6 years and older. The 95th percentile is 0.046 micrograms/liter urine in the same subsample of the US population. If a urine specimen is found to have urine uranium levels higher than the reference population norms, or if there are other questions that might help the interpretation process, then USACHPPM may contact the ordering physician for further guidance and instruction.

(4) The National Report on Human Exposure to Environmental Chemicals is an ongoing assessment of the exposure of the US population to environmental chemicals using biomonitoring. The first national report on 27 chemicals was issued in Mar 01. A second report released in Jan 03 presents blood and urine levels of 116 environmental chemicals from a sample of people that represent the non-institutionalized, civilian US population during the 2-year period 1999-2000. The selection of this report that presents the results of uranium in urine is found at http://www.cdc.gov/exposurereport/**2nd**/pdf/uranium.pdf. The NHANES III report is to be released in early 2005.

11. Medical and other records.

a. Healthcare providers must clearly document all cases of wounded personnel with embedded metal fragments.

b. The MEDCOM Patient Administration Division (PAD) is responsible for identifying coding requirements to ensure that patients with retained fragments, post-conflict, have their medical records coded appropriately. Coders will input as accurately as possible

the ICD-9-CM diagnosis that best fits the patient's condition, but ensuring that the coded diagnosis indicates "retained shrapnel." PAD will provide quality assurance of coding patient encounters to ensure accuracy and completeness.

c. Patient care entries:

(1) If a Soldier, either inpatient or outpatient, has any retained fragments, the medical record, DD Form 2766 (Adult Preventive and Chronic Care Flow Sheet), item 20, will be annotated with an appropriate entry. Entries may include; embedded metal fragment, retained metal fragment, or suspected retained shrapnel. If the metal type (e.g., DU) is known at the time, this will be annotated.

(2) Patients medically evacuated (both in and outpatient) require a TRAC2ES entry in the Patient Movement Request type injury code.

(3) Patients followed up or evaluated per treatment guidelines at all MTFs must have the appropriate Standard Ambulatory Data Record entry. When the health encounter is post-deployment, the V70.5_6 must be used as the primary code and the code for the deployment-related presenting problem should be placed in the secondary position. (V 70.5_6 is appropriate to use on both active duty and non-active duty records.)

d. There is no specific code for suspected inhalation exposure to DU, but this diagnosis should be annotated on the medical record, DD Form 2766, item 20. When the health encounter is post-deployment, the V70.5_6 must be used as the primary code and the code for the deployment-related presenting problem should be placed in the secondary position. (V 70.5_6 is appropriate to use on both active duty and non-active duty records.)

e. The Standard Form 557, Miscellaneous, will identify whether the patient is Level I, II or III for suspected DU exposure, and whether the patient has a retained fragment or suspected inhalation exposure. All Standard Form 557, Miscellaneous, will have the name and contact information for the ordering physician. An example of this form can be found at: http://chppm-www.apgea.army.mil/documents/TG/TECHGUID/TG211.pdf.

f. The local clinical laboratory will retain a registry of all specimens (fragments and urine) sent to USACHPPM for DU analysis. The MTF requesting laboratory and the requesting healthcare provider will receive the results in hardcopy. The local medical laboratory is responsible for ensuring that results are entered into the individual's medical record and into the local automated clinical information system (e.g., CHCS). NOTE: USACHPPM will soon become a satellite user of CHCS. Upon completion of that action, requests for DU bioassay may be submitted on line and the results will be posted similar to current standard medical tests.

g. A DoD DU Questionnaire and Health Survey will be completed for all personnel who will provide either fragment or urine specimens for bioassays. The original

completed DoD DU Questionnaire and Health Survey will be placed in the individual medical record and a copy will accompany any specimens sent to USACHPPM for analysis.

12. Medical follow-up. The need for subsequent DU bioassays for medical follow-up is based upon uranium levels found in the initial and subsequent specimen(s). Follow-up exams and bioassay are the responsibility of the PCM. This care should be provided in accordance with the Post-Deployment Health Clinical Practice Guideline (reference 17, Annex 1, http://www.pdhealth.mil/). In addition, consultation with USACHPPM may be obtained during the course of patient assessment.

13. Reporting and archiving.

a. The USACHPPM will archive and report results of fragment analysis and urine bioassay results to the MTF laboratory that submitted the specimen with interpretation and comparison to referent norms as appropriate.

b. The USACHPPM will send dose interpretation and laboratory results to the US Army Radiation Standards and Dosimetry Laboratory, Ionizing Radiation Dosimetry Branch, TMDE, Redstone Arsenal, AL, for archiving. Copies for members of the other Military Services will also be furnished, if identified, to their appropriate Dosimetry Center, for archiving.

c. The USACHPPM will forward a copy of all DU assessment and testing results to the DoD Deployment Health Clinical Center (DHCC) at Walter Reed Army Medical Center. The DHCC serves as the central archive for all DoD patient information related to DU exposure, testing, and follow-up for active duty and reserve personnel. PCMs will forward copies of all referrals and narrative summaries from DU follow-up care to the DHCC for archiving.

d. DoD requires a semi-annual progress report for Operation Iraqi Freedom. This report provides cumulative data on both urinalyses and fragment analyses and is a composite of input from USACHPPM and the Regional Medical Commands (RMC). For example, the RMC may be asked:

(1) How many personnel have been categorized as potentially exposed by Level?
(2) How many 24-hour urine specimens did you collect? Were they all sent to CHPPM?
(3) How many results have you received?
(4) How many results have been placed in the medical records?
(5) How many patients have received the results?

There is every reason to believe that DU summary reports will be required in future operations.

14. Training.

a. All healthcare providers will receive DU awareness training and training on procedures to implement this Army policy. References 6 thru 8, Annex 1 to this enclosure) provide information on how to obtain support materials for DU awareness training.

b. Sustainment training on DU will be conducted at least biennially and within 3 months for newly assigned personnel.

Annex 1 – REFERENCES
Annex 2 – RESPONSIBILITIES FOR ARMY MEDICAL PERSONNEL
Annex 3 – SHORT QUESTIONNAIRE TO ASSESS POTENTIAL DU EXPOSURE
Annex 4 – DOD DU QUESTIONNAIRE AND DOD HEALTH SURVEY QUESTIONNAIRE
Annex 5 – PACKING AND SHIPPING REQUIREMENTS FOR DU BIOASSAY SPECIMENS
Annex 6 – HEALTHCARE PROVIDER CHECKLIST AND PROCEDURES FOR DU MEDICAL MANAGEMENT
Annex 7 – USE OF BIOASSAY IN SUSPECTED DU EXPOSURE SITUATIONS
Annex 8 – DEPLETED URANIUM EXPOSURE MEDICAL MANAGEMENT PROCESS FLOW

ANNEX 1

REFERENCES

1. Memorandum, Assistant Secretary of Defense for Health Affairs, 9 Apr 04, subject: Operation Iraqi Freedom Depleted Uranium Medical Management.

2. Memorandum, Assistant Secretary of Defense for Health Affairs, HA Policy 03-012, 30 May 03, subject: Policy for the Operation Iraqi Freedom Depleted Uranium (DU) Medical Management. http://www.ha.osd.mil/policies/2003/03-012.pdf

3. Memorandum, Under Secretary of Defense for Personnel and Readiness, HA Policy 04-004, 6 Feb 04, subject: Biomonitoring Policy and Approved Bioassays for Depleted Uranium and Lead. http://www.ha.osd.mil/policies/2004/04-004.pdf

4. Memorandum, US Army Medical Command, OTSG/MEDCOM Policy Memo 03-007, 13 Jan 04 subject: Medical Management of Army Personnel Exposed to Depleted Uranium (DU).

5. Centers for Disease Control and Prevention. Second National Report on Human Exposure to Environmental Chemicals. Jan 03, revised Mar 03. http://www.cdc.gov/exposurereport/**2nd**/pdf/uranium.pdf.

6. Audiovisual product number 711231, Policy for the Treatment of Personnel Wounded by Depleted Uranium Munitions, 28 Dec 98. http://afishp6.afis.osd.mil/dodimagery/davis/. (NOTE: Enter "Search" terms "depleted uranium".)

7. Audiovisual product number 806486, Medical Management of Depleted Uranium Casualties, 14 Jan 00. http://afishp6.afis.osd.mil/dodimagery/davis/. (NOTE: Enter "Search" terms "depleted uranium". This is a US Navy Bureau of Medicine and Surgery sponsored tape.)

8. Audiovisual product number 711314, TVT 3-120, Tier 1 Depleted Uranium (DU) General Awareness Training, 19 Jun 00.

9. Army Regulation (AR) 40-5, Preventive Medicine, 15 Oct 90.

10. North Atlantic Treaty Organization (NATO) Standardization Agreement (STANAG) 2068, "Emergency War Surgery," 88.

11. American National Standards Institute (ANSI), HPS N13.22-1995, Bioassay Programs for Uranium, 96.

12. Department of Defense Instruction (DODI) 6490.3, Implementation and Application of Joint Medical Surveillance for Deployments, 7 Aug 97.

13. Presidential Review Directive (PRD) 5, Planning for Health Preparedness for and Readjustment of the Military, Veterans, and Their Families After Future Deployments, Aug 98.

14. AR 11-9, The Army Radiation Safety Program, 28 May 99.

15. Agency for Toxic Substances and Disease Registry (ATSDR), Toxicological Profile for Uranium (Update) and Public Health Statement, Sep 99. http://www.atsdr.cdc.gov/toxprofiles/tp150.html

16. AR 40-400, Patient Administration, 12 Mar 01.

17. Clinical Practice Guideline for Post-Deployment Health Evaluation and Management, Dec 01. http://www.pdhealth.mil/main.asp

18. AR 700-48, Logistics: Management of Equipment Contaminated with Depleted Uranium or Radioactive Commodities,16 Sep 02.

19. Department of the Army Pamphlet (DA Pam) 700-48, Logistics: Handling Procedures for Equipment Contaminated with Depleted Uranium or Radioactive Commodities, 27 Sep 02.

20. Joint Staff Capstone Document, undated, Force Health Protection – Healthy and Fit Force, Casualty Prevention, Casualty Care and Management.

21. Draft MEDCOM Redeployment/Demobilization Plan, version 3 May 03.

22. Logistics Management Institute, Final Draft: Candidate Biomarkers of Exposure, prepared for USACHPPM, 4 Dec 02.

23. McDiarmid MA, S Engelhardt, M Oliver, P Gucer, PD Wilson, R Kane, M Kabat, B Kaup, L Anderson, D Hoover, L Brown, B Handwerger, R Albertini, D Jacobson-Kram, C Thorne, and K Squibb. 2004. "Health Effects of Depleted Uranium on Exposed Gulf War Veterans: A 10-Year Follow-Up." J. Toxicol. Envir. Health, 67:277-296.

ANNEX 2

RESPONSIBILITIES FOR ARMY MEDICAL PERSONNEL

1. **Assistant Chief of Staff/Director, Healthcare Operations,** will provide operations, planning, and sustainment training (e.g., directing DU training in those years when Soldier Common Task Training does not include DU materials) support to the MEDCOM Major Subordinate Commands for implementing this policy during redeployment and demobilization.

2. **Assistant Chief of Staff/Director, Health Policy and Services,** will ensure that:

a. The clinical consultants are aware of and comply with this policy and the specified procedures.

b. The Ancillary Health Services Division provides oversight of the clinical laboratory support for the specified DU bioassay procedures.

3. **Commanders, Regional Medical Commands (RMC),** will:

a. Provide oversight and guidance to their Health Service Area to implement this policy and its specified procedures, to include support planning for redeployment/ demobilization, training of MTF and Medical Demobilization personnel on this policy, and radiation safety support.

b. The medical records of patients with retained DU fragments are properly coded according to the procedures specified in the enclosure to the basic policy memorandum.

c. Ensure that the MTFs in their Regions provide and document DU Awareness training and training in the procedures specified by this policy not later than (NLT) 90 calendar days following promulgation of this policy.

d. Continue to provide DU Awareness training on a biennial basis.

e. Provide the name and contact information for a single point of contact on DU issues within the RMC. This information must be provided to the policy POC (Director, POPM-SA) NLT 30 calendar days following promulgation of this policy.

4. **Commander, USACHPPM,** will:

a. Provide the Army bioassay and metal fragment identification processes and the archiving of all laboratory results and interpretations.

b. Provide the results of urine and fragment analyses to the clinical laboratory and the physician submitting the specimens consistent with approved USACHPPM protocols and procedures with a goal of 45 calendar days to provide results to the requestor.

c. Serve as the Army lead for coordination of the laboratory procedures and sample management procedures between the Army, the other Military Services, and the Department of Veterans Affairs.

d. Provide consultative assistance regarding the dose assessment/estimations and health implications of exposure to DU or metal fragments.

5. **Commander, Army Medical Department Center and School** will develop training materials (to include web-based material) suitable for use by both Table of Organization and Equipment (TO&E) and Table of Distribution and Allowances (TDA) medical elements of the Active and Reserve Components worldwide. The training must encompass medical policies from both DoD and MEDCOM but with an emphasis on this MEDCOM policy.

6. **Commanders/OICs of MTFs** will ensure that:

a. This policy and its specified procedures are implemented for all encounters through their MTFs with patients with retained metal fragments and/or suspected inhalation exposure to DU.

b. DU Awareness training and training on the procedures specified in this policy are provided to their HCPs and documented IAW RMC guidance.

c. Consideration is given to appointing a single case manager for patients submitting urine specimens for DU bioassay.

7. **Healthcare providers at medical demobilization stations** will:

a. Ensure the completion of the DD Form 2796 (Apr 03), Post-Deployment Health Assessment, for all Army personnel processing through the stations.

b. Ensure the completion of the short DU exposure assessment questionnaire (See Annex 3), when indicated by the DD Form 2796.

c. Assign a DU potential exposure level (I, II, or III) to Soldiers with potential exposure, documenting the assigned level on the DD Form 2796.

d. Refer all Soldiers assigned a potential DU exposure Level I or II to a primary care manager at the supporting MTF for further evaluation and/or bioassay, documenting the referral on the DD Form 2796.

8. **Primary care managers (PCM) at MTFs** will:

a. Review the DD Form 2796; the completed short questionnaire; and the assigned exposure level for completeness. The PCM will assign and document an exposure level category if one has not been assigned.

b. Refer the patient to the clinical laboratory for a 24-hour urine specimen collection and creatinine analysis. Inform the Soldier that results of laboratory tests will be sent to the Deployment Health Clinical Center (DHCC) and that they may be obtained by contacting the DHCC either on-line (www.pdhealth.mil), by telephone at (202) 782-6563, Fax: (202) 782-3539, or Toll Free Help Line: (866) 559-1627.

c. Complete the DoD DU Questionnaire and Health Survey (DD Form 2872 Test DU and DD Form 2872-1 Test, respectively), ensuring that the originals are placed in the individual medical record and a copy accompanies any specimens (fragments or urine) sent to USACHPPM.

9. **Healthcare providers(HCP) in field medical units** will:

a. Identify Army personnel with retained metal fragments and suspected inhalation or incidental exposure to DU. The initial HCP does this by:

(1) Reviewing and ensuring the completion of the DD Form 2796 for all redeploying/demobilizing Soldiers.

(2) Identifying wounded individuals and individuals with suspected DU exposure who provided a positive response on the DD Form 2796 (Apr 03), Post-Deployment Health Assessment, to Questions 14, 17 or 18 regarding potential DU Exposure.

(3) Using the short exposure assessment questionnaire provided in Annex 3 to complete the potential exposure assessment; assigning a DU potential exposure level (I, II, or III); and determining the need for bioassay for potentially exposed Soldiers.

(4) Documenting the assigned level (Level I-III) of potential DU exposure on the DD Form 2796.

b. Refer all individuals assigned a Level I or Level II potential DU exposure to their PCM at the MTF for further assessment and a 24-hour urine uranium analysis as soon as possible.

10. **The DU Case Manager,** will:

a. Adhere to the guiding principles and practices of the case management process.

b. Act as the single point of contact in the MTF on DU issues.

c. Facilitate the risk communication process including the transmittal bioassay results, coordination of potential referrals to the VA Long-Term DU Follow-up Program, and communication with the Deployment Health Clinical Center.

d. Ideally be appointed from one of the clinical specialties of the MTF.

ANNEX 3

SHORT QUESTIONNAIRE TO ASSESS POTENTIAL DU EXPOSURE

Please Print:

Health Care Provider/Interviewer's Name: _____

Location & Date: _____

Patient's Name & Unit: _____

Conclusion/Exposure Level Assigned: _____

QUESTIONS	CIRCLE RESPONSE	
1. Were you in, on, or near (within 50 meters) an armored vehicle at the time the vehicle was struck by depleted uranium munitions?	Yes	No
2. Were you in a vehicle struck by armor-piercing munitions?	Yes	No
3. If you were in a vehicle struck by armor-piercing munitions, were the munitions DU or did you observe burning fragments (like a Fourth of July sparkler) when the vehicle was hit?	Yes	No
4. Were you in, on, or near (within 50 meters) a vehicle with depleted uranium armor (Abrams tank) at the time the armor was breached by DU or non-DU munitions?	Yes	No
5. Were you within 50 meters of a burning Abrams tank, British tank, Bradley Fighting Vehicle or any vehicle known to contain DU, DU armor or DU munitions?	Yes	No
6. Did your deployment duties involve repeated entry or recovery of vehicles likley damaged by munitions from an Abrams tank, British tank, Bradley Fighting Vehicle or USAF A-10 ("Warthog") aircraft?	Yes	No
7. Did you have any other reason to believe you were exposed to DU?	Yes	No
8. Do you currently retain fragments in your body from enemy or friendly fire?	Yes	No

FOR HEALTHCARE PROVIDER USE

DU Exposure Decision Matrix*

Yes Response to Question:	Exposure Level
1	I
2	Go to question 3
3	I
4	I
5	II
6	II
7	III Clinician's judgment on bioassay
8	Coded for fragments

ANNEX 4

DOD DU QUESTIONNAIRE
AND
DOD HEALTH SURVEY QUESTIONNAIRE

The following forms can be found on the Post Deployment Health (PDH) website http://www.pdhealth.mil/du.asp. AMEDD personnel through local reproduction will use the DU questionnaire and the Health Survey forms until a standardized SF 600 overprint is approved and provided to the field.

There are versions in Adobe Acrobat as well as a link to a ProForm and FormFlow versions also available at PDH. These versions should allow electronic completion.

DEPLETED URANIUM (DU) QUESTIONNAIRE

1. MILITARY TREATMENT FACILITY (MTF): _____ MTF UIC: _____

INSTALLATION NAME: _____

PRIVACY ACT STATEMENT

AUTHORITY: Sections 1074f, 3013, 6013, 8013, Title 10, U.S. Code; and E.O. 9397.

PRINCIPAL PURPOSE(S): To assess your state of health after deployment or for any deployment related concern and to assist military health care providers in identifying and providing present and future medical care to you.

ROUTINE USE(S): To other Federal and State agencies and civilian health care providers as necessary, in order to provide necessary medical care and treatment.

DISCLOSURE: Voluntary; however, if information is not provided, health care WILL be furnished, but comprehensive care may not be possible.

PART I

2. LAST NAME

3. FIRST NAME | MIDDLE NAME | TYPE

4.a. SOCIAL SECURITY NUMBER ___ ___ | b. SERVICE SERIAL NUMBER | c. DATE OF BIRTH Month Day Year

5. ADDRESS *(Street name and apartment number, if applicable)*

b. CITY OR TOWN

c. COUNTY | d. STATE | e. ZIP CODE | PLUS 4 *(Optional)* | f. COUNTRY | STATE

g. TELEPHONE NUMBERS WHERE MEMBER MAY BE CONTACTED
Daytime | Evening

TODAY'S DATE Month Day Year

6.a. MARITAL STATUS
1 = Married 2 = Divorced 3 = Separated 4 = Widowed 5 = Single, Never Married

b. SEX
F = Female M = Male

c. CURRENT STATUS
1 = Inpatient 2 = Outpatient 3 = Incarcerated 4 = Active Duty, Inpatient 5 = Active Duty, Outpatient

d. BRANCH OF SERVICE
1 = Army 2 = Air Force 3 = Navy 4 = Marines 5 = Coast Guard 6 = Other

7.a. LAST PERIOD OF SERVICE IN PERSIAN GULF AREA PRIOR TO OPERATION IRAQI FREEDOM
(August 2, 1990 - March 18, 2003)

FROM Day Month Year TO Day Month Year

b. LAST PERIOD OF SERVICE IN PERSIAN GULF AREA DURING OPERATION IRAQI FREEDOM
(March 18, 2003 - Present)

FROM Day Month Year TO Day Month Year

8. LAST PERIOD OF SERVICE IN AREAS OTHER THAN PERSIAN GULF WHEN EXPOSURE TO DU MAY HAVE OCCURRED

FROM Day Month Year TO Day Month Year

Reset

NAME *(Last, First, Middle Initial)*	SSN

PART II *(To be completed by Environmental Health Coordinator or Clinician)*

9. Who referred the member for medical evaluation? *(Enter one letter code)*

A - Deployment Health Support Directorate *(formerly the Office of the Special Assistant for Gulf War Illness (OSAGWI))* of Department of Defense
B - Another Department of Defense Office
C - Department of Veterans Affairs (VA)
D - Self referred *(including the DD2796 - Post Deployment Health Assessment Form)*
E - Service/Commander directed
F - Other sources *(identify, including referring medical facility name/address)*:

Answer each question with: Y = Yes; N = No; D = Don't Know

10. Where did member serve?	
a. Kuwait	
b. Saudi Arabia	
c. Iraq	
d. Only on a ship (not ashore)	
e. Other *(identify)*	
11. Was the member a logistics assistance representative (LAR) who inspected depleted uranium contaminated systems to determine reparability?	
12. Was the member a member of a battle damage assessment team (BDAT) who examined U.S. combat vehicles known or suspected to be damaged or destroyed by DU?	
13. If the member served prior to Operation Iraqi Freedom, was he/she a member of the 144th Service and Supply Company who processed damaged equipment, including some with DU contamination during Operation Desert Storm/Desert Shield?	
14. Was the member a member of a radiation control (RADCON), or other radiation survey team deployed in the Persian Gulf?	
15. Was the member involved in the examination or recovery of damaged or destroyed enemy vehicles?	
16. Was the member involved in the downloading of equipment or munitions from vehicles known or suspected to be contaminated by DU?	
17. Was the member a member of a unit maintenance team performing maintenance on or in systems known or suspected to be contaminated by DU?	
18. If the member served prior to Operation Iraqi Freedom, was he/she at Doha on July 11, 1991, at the time of the fire?	
a. Was the member directly involved in clean-up operations following the Doha explosion and fire?	
b. Was the member exposed to smoke from burning Doha rounds?	
19. Was the member in or on a vehicle hit by enemy fire at the time it was hit? If "No", skip to Question 20.	
a. If "Yes", what type of vehicle:	
(1) Abrams battle tank	
(2) Bradley fighting vehicle	
(3) Other *(identify)*	
(4) Don't know	
b. Was the vehicle hit by DU munitions?	
20. Did the member enter an Abrams battle tank to perform rescue operations immediately after it was struck by enemy fire?	
21. Did the member enter an Abrams battle tank to retrieve sensitive items immediately after it was struck by enemy fire?	
22. Did the member enter a Bradley fighting vehicle to perform rescue operations immediately after it was struck by enemy fire?	
23. Did the member enter a Bradley fighting vehicle to retrieve sensitive items immediately after it was struck by enemy fire?	

NAME *(Last, First, Middle Initial)*	SSN

PART II *(Continued)*
Answer: Y = Yes; N = No; D = Don't Know

24. Was the member in or on a vehicle hit by friendly fire at the time it was hit? If "No", skip to Question 25.	
a. If "Yes", what type of vehicle:	
(1) Abrams battle tank	
(2) Bradley fighting vehicle	
(3) Other *(Identify)*	
(4) Don't know	
b. Was the vehicle hit by DU munitions?	
25. Did the member enter an Abrams battle tank to perform rescue operations immediately after it was struck by friendly fire?	
26. Did the member enter an Abrams battle tank to retrieve sensitive items immediately after it was struck by friendly fire?	
27. Did the member enter a Bradley fighting vehicle to perform rescue operations immediately after it was struck by friendly fire?	
28. Did the member enter a Bradley fighting vehicle to retrieve sensitive items immediately after it was struck by friendly fire?	
29. Did the member enter any enemy vehicle to perform rescue operations immediately after it was struck by friendly fire? If "No", skip to Question 30. If "Yes", what type of vehicle?	
a. Tank	
b. Other tracked vehicle *(Identify)*	
c. Truck	
d. Other wheeled vehicle *(Identify)*	
e. Other type vehicle *(Identify)*	
f. Don't know	
30. Did the member enter any enemy vehicle to retrieve sensitive items or intelligence material immediately after it was struck by friendly fire? If "No", skip to Question 31. If "Yes", what type of vehicle?	
a. Tank	
b. Other tracked vehicle *(Identify)*	
c. Truck	
d. Other wheeled vehicle *(Identify)*	
e. Other type vehicle *(Identify)*	
f. Don't know	
31. Was the member exposed to smoke from any enemy equipment struck by DU rounds?	
32. Did the member remove equipment or other items from a damaged or destroyed U.S. or enemy vehicle? If "No", skip to Question 33.	
a. If the member removed something from a vehicle, please describe it:	
b. Does the member still have equipment or other items removed from a damaged or destroyed U.S. or enemy vehicle?	

NAME *(Last, First, Middle Initial)*	SSN

PART II *(Continued)*
Answer: Y = Yes; N = No; D = Don't Know

33. Was the member within 50 meters (54.68 yards) of a vehicle when it was hit (not including vehicles the member was in or on that were hit)? If "No", skip to Question 34.	
a. If "Yes", what type of vehicle:	
(1) Abrams battle tank	
(2) Bradley fighting vehicle	
(3) Other *(Identify)*	
(4) Don't know	
b. Was the vehicle hit by DU munitions?	
34. Did the member breathe smoke or dust from vehicles hit by enemy or friendly fire? If "No", skip to Question 35.	
a. If "Yes", what type of vehicle:	
(1) Abrams battle tank	
(2) Bradley fighting vehicle	
(3) Other *(Identify)*	
(4) Don't know	
b. Was the vehicle hit by DU munitions?	
35. Did the member climb on or enter vehicles hit by enemy or friendly fire some time after the immediate post-impact rescue period? If "No", skip to Question 36.	
a. If "Yes", what type of vehicle:	
(1) Abrams battle tank	
(2) Bradley fighting vehicle	
(3) Other *(Identify)*	
(4) Don't know	
b. How many times?	
(1) 1 time	
(2) 2 times	
(3) 3 - 10 times	
(4) More than 10 times	
(5) Don't know	
c. How long (in total) was the member on board the vehicle(s)?	
(1) Less than 5 minutes	
(2) 5 - 15 minutes	
(3) 16 - 30 minutes	
(4) More than 30 minutes	
(5) Don't know	
d. Was the vehicle known to be contaminated with DU?	

NAME *(Last, First, Middle Initial)*	SSN

PART II *(Continued)*
Answer: Y = Yes; N = No; D = Don't Know

36. Did the member pass within 50 meters (54.68 yards) of a damaged or destroyed vehicle? If "No", skip to Question 37.	
a. If "Yes", how long (in total) after the destructive event:	
(1) Less than 12 hours	
(2) 12 - 24 hours	
(3) More than 24 hours	
(4) Don't know	
b. What type of vehicle	
(1) Abrams battle tank	
(2) Bradley fighting vehicle	
(3) Other *(Identify)*	
(4) Don't know	
c. Was the vehicle burning?	
37. Was the member wounded as a result of being in, on, or within 50 meters (54.68 yards) of the damaged vehicle at the time it was hit? If "No", skip to Question 38.	
a. If "Yes", where was the member wounded:	
(1) Leg/foot	
(2) Arm/hand	
(3) Face/head	
(4) Neck	
(5) Body	
b. Does the member have retained fragments or shrapnel in his/her body?	
38. Did the member fire DU rounds?	
39. Did the member handle bare/damaged DU penetrator rounds? If "No", skip to Question 40.	
a. If "Yes", did the member handle the rounds with gloves?	
b. Did the member handle the rounds with shielding?	
40. Did the member have exposure to DU that is NOT captured by this questionnaire? If "Yes", describe:	
41. Does the member have other exposures and experiences to discuss with the provider? If "Yes", describe:	
42. Is the 24-hour urine collection for Uranium being performed? If "No" or "Don't Know", explain. If "Yes", the Service Laboratory or Baltimore DU staff will update this questionnaire with the results upon completion of the test.	

NAME *(Last, First, Middle Initial)*	SSN

PART II *(Continued)*

43.a. Date(s) of Potential DU Exposure

b. Circle highest level of exposure: Level I Level II Level III

c. Other Comments

44.a. Name of Examiner *(print)*	b. Telephone Number of Examiner

45. Title of Examiner	46. Signature of Examiner

NAME *(Last, First, Middle Initial)*	SSN

PART III *(To be completed by the Service Laboratory or Baltimore VAMC DU Follow-Up Program Staff)*

If the 24-hour urine collection test is being performed ("Yes" response to Question 42), the Service Laboratory or Baltimore DU staff will update the questionnaire with the results upon completion of the test.

47. Corrected urine uranium (expressed per mcg per g creatinine) 3 digits to the left and 3 digits to the right of the decimal.				■				
Repeat urine uranium.				■				

48. Remarks

HEALTH SURVEY

(Supersedes Short Form (SF) - 36)

PRIVACY ACT STATEMENT

AUTHORITY: Sections 1074f, 3013, 6013, 8013, Title 10, U.S. Code; and E.O. 9397.
PRINCIPAL PURPOSE(S): To assess your state of health after deployment or for any deployment related concern and to assist military health care providers in identifying and providing present and future medical care to you.
ROUTINE USE(S): To other Federal and State agencies and civilian health care providers as necessary, in order to provide necessary medical care and treatment.
DISCLOSURE: Voluntary; however, if information is not provided, health care WILL be furnished, but comprehensive care may not be possible.

NAME *(Last, Middle, First)*	SSN	DATE

This survey asks for your views about your health. This information will help you keep track of how you feel and how well you are able to do your usual activities.

Answer every question by selecting the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is: (Fill in the circle that best describes your answer.)

Excellent	Very Good	Good	Fair	Poor
○	○	○	○	○

2. Compared to one year ago, how would you rate your health in general now?

Much better now than one year ago	Somewhat better now than one year ago	About the same as one year ago	Somewhat worse now than one year ago	Much worse now than one year ago
○	○	○	○	○

3. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much? (Select one circle on each line.)

	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. Vigorous Activities, such as running, lifting heavy objects, participating in strenuous sports	○	○	○
b. Moderate Activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	○	○	○
c. Lifting or carrying groceries	○	○	○
d. Climbing several flights of stairs	○	○	○
e. Climbing one flight of stairs	○	○	○
f. Bending, kneeling, or stooping	○	○	○
g. Walking more than a mile	○	○	○
h. Walking several hundred yards	○	○	○
i. Walking one hundred yards	○	○	○
j. Bathing or dressing yourself	○	○	○

4. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Cut down on the amount of time you spent on work or other activities	○	○	○	○	○
b. Accomplished less than you would like	○	○	○	○	○
c. Were limited in the kind of work or other activities	○	○	○	○	○
d. Had difficulty performing the work or other activities (for example, it took extra effort)	○	○	○	○	○

Reset

NAME	SSN

5. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Cut down on the amount of time you spent on work or other activities	O	O	O	O	O
b. Accomplished less than you would like	O	O	O	O	O
c. Did work or other activities less carefully than usual	O	O	O	O	O

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

Not at all	Slightly	Moderately	Quite a bit	Extremely
O	O	O	O	O

7. How much bodily pain have you had during the past 4 weeks?

None	Very mild	Mild	Moderate	Severe	Very severe
O	O	O	O	O	O

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
O	O	O	O	O

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the past 4 weeks:	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Did you feel full of life?	O	O	O	O	O
b. Have you been very nervous?	O	O	O	O	O
c. Have you felt so down in the dumps that nothing could cheer you up?	O	O	O	O	O
d. Have you felt calm and peaceful?	O	O	O	O	O
e. Did you have a lot of energy?	O	O	O	O	O
f. Have you felt downhearted and depressed?	O	O	O	O	O
g. Did you feel worn out?	O	O	O	O	O
h. Have you been happy?	O	O	O	O	O
i. Did you feel tired?	O	O	O	O	O

10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
O	O	O	O	O

11. How TRUE or FALSE is each of the following statements to you?

	Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a. I seem to get sick a little easier than other people	O	O	O	O	O
b. I am as healthy as anybody I know	O	O	O	O	O
c. I expect my health to get worse	O	O	O	O	O
d. My health is excellent	O	O	O	O	O

Reset

ANNEX 5

PACKING AND SHIPPING REQUIREMENTS FOR DU BIOASSAY SPECIMENS

1. Your MTF is requested to stock these items for your use in shipping specimens to USACHPPM. For your first-time collections, USACHPPM may be able to ship by Federal Express a limited number of these items for your use.

a. Bottles used for collecting and mailing urine specimens are Fisher one liter wide-mouth plastic bottles (Cat # 02 896 2F from Fisher Scientific, https://www1.fishersci.com/index.jsp). (1-800-766-7000)

b. Two Five quart (imperial gallon) aluminum paint cans (Cat# C-680, $4.83 each, HAZMATPAC, http://www.hazmatpac.com/). (1-800-923-9123)

c. Absorbent Packing Material (Cat# SP-U100, 50/pack $44.00 per pack, HAZMATPAC, http://www.hazmatpac.com/). (1-800-923-9123)

d. Shipping Boxes (Lynchburg Sheltered Industries Cat#183-9491 12x12x12, http://www.lsiworks.org/). (434-847-4488)

2. In the shipping package, use "ziplock" freezer bags to protect memorandum, laboratory slips, and other documents sent with the urine specimens.

3. Collect 24-hour urine specimen in 32-oz Fisher Wide mouthed bottles.

a. Label bottles with SS# and Name and number them #1, #2.

b. Remove 1 mL sample from each bottle for creatinine analysis and do analysis.

c. Place specimens in the five-quart aluminum paint can, wrap each can with absorbent material (i.e., baby diaper) place in shipping box and send specimen and creatinine results by FEDEX, DHL, or best available means to CHPPM.

4. Mail or ship (FEDEX, DHL or best available means) the packages of urine specimens to the following address:

US ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE
ATTN: MCHB-TS-LRD/Division Chief/RCCCD
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5403

5. Before shipping any urine specimens or metal fragments to USACHPPM, please contact the USACHPPM Laboratory by telephone, facsimile (410) 436-7487, or e-mail. Points of Contact:

Primary: Mr. Ronald Swatski, Division Chief, Radiologic, Classic, and Clinical Chemistry Division, at (410) 436-3983, DSN 584-3983, or ronald.swatski@us.army.mil.

Alternate: Mr. Tom Beegle at (410) 436-8244, DSN 584-8244, or Thomas.Beegle@us.army.mil

Packaging and Shipping Support: Ms. Heidi Taylor at (410) 436-4336, DSN 584-4336 or Heidi.Taylor@us.army.mil

USACHPPM EOC Current Operations SIPRNET address is: usachppm-eoc@usachppm.army.smil.mil. The USACHPPM SIPRNET website is http://usachppm1.army.smil.mil/

ANNEX 6

HEALTHCARE PROVIDER CHECKLIST AND PROCEDURES FOR DU MEDICAL MANAGEMENT

_____ If the individual is wounded, has been identified by unit or chain of command as potentially exposed, completes the DD Form 2796 indicating a DU exposure, or has already been identified by DOD as possibly DU-exposed, an individual DU exposure assessment questionnaire and examination needs to be completed. Annex 7 is a flow diagram of this process.

_____ Complete the short exposure assessment questionnaire (see Annex 3) to identify potential exposure level of individuals. See definitions of the three levels of DU exposure in paragraph 4 of the Enclosure.

_____ Order 24-hour urine collection and urine creatinine level for all Level I and II individuals. A urine creatinine test must be performed on the urine specimens. NOTE: Urine collection is not required in a Theater of Operations. Higher echelon medical facilities acting as enroute processing points for redeploying Soldiers are not required to collect specimens on those Soldiers; however, when a urine specimen for DU bioassay is required, based upon the potential DU exposure level, the medical treatment facility (MTF) should document on the DD Form 2796, Post-Deployment Health Assessment, and other medical records (e.g., DD Form 2766, sections 5 and 7 (block 20) that a 24-hour urine specimen for DU bioassay should be collected by the Soldier's home station MTF. In addition, code the information into the Ambulatory Data Management (ADM) (previously called Ambulatory Data System (ADS)) and the Composite Healthcare System (CHCS).

_____ Complete the DD Form 2872, DU Questionnaire, and DD Form 2872-1, Health Survey, (Annex 4) for all individuals who provide fragments and/or a 24-hour urine specimen for uranium bioassay analysis. Retain a copy of these forms in the medical record.

_____ Order 24-hour urine collection for uranium bioassay for Level III individuals only if based on other medical indications from the assessment or on the potentially exposed individual's request.

_____ Send the 24-hour urine specimen with a completed Standard Form 557, Miscellaneous; a copy of the completed DoD DU Questionnaire and Health Survey; and results of a urine creatinine analysis, using an aliquot of the 24-hour urine collection, to USACHPPM for DU analysis.

_____ For corroboration of the urine creatinine measurement level and for input into the dose assessment, the patient's age, sex, height, and weight must also be provided on the laboratory request, Standard Form 557, Miscellaneous. Any pertinent clinical findings, such as patient hydration status (e.g., increased fluid intake) that might affect the interpretation of the laboratory results should be included.

_____ Instructions for urine collection, type of collection containers, shipping instructions, and mailing addresses can be found in Annex 5.

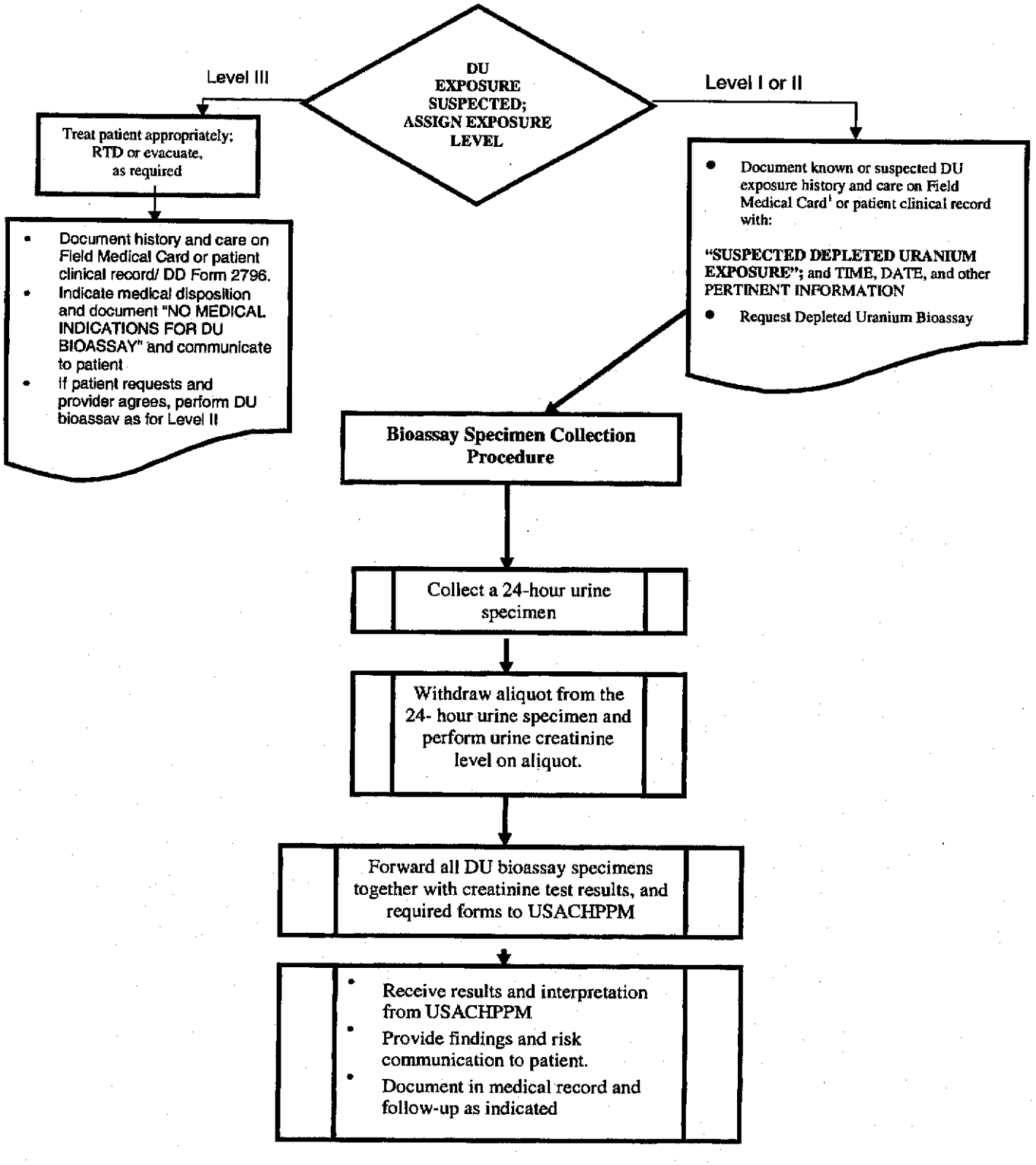
_____ All metallic fragments removed surgically from patients classified as Level I must be sent to USACHPPM for analysis. Instructions and mailing addresses are at Annex 5. Metal fragments removed from other than potentially DU-exposed patients should be sent to USACHPPM for analysis.

_____ Diagnostic evaluation of additional or other signs or symptoms, identified during the examination, are to be completed as clinically indicated.

ANNEX 7

USE OF BIOASSAY IN SUSPECTED DU EXPOSURE SITUATIONS

1. Determine the DU exposure level category (level I, II, or III).
2. Document suspected DU exposure on the field medical card for echelons I and II, or in the medical record on the DD Form 2766 for echelons III and IV, or on DD Form 2796 for re-deploying personnel.
3. Send 24-hour urine specimen, urine creatinine test result, Miscellaneous SF 557, and Supplemental DU exposure questionnaire to the USACHPPM laboratory for all personnel assigned a Level I and II exposure category.



ANNEX 8

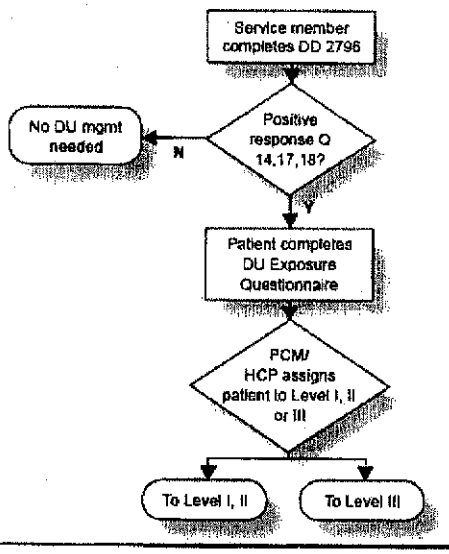
DEPLETED URANIUM EXPOSURE
MEDICAL MANAGEMENT PROCESS FLOW

The following material is taken from the Post Deployment Health website. In addition, the Deployment Health Clinical Center has printed cards and placed them in the Clinical Practice Guideline kits for use in Medical Treatment Facilities.

Depleted Uranium Exposure Medical Management Process Flow
DoD Process Summary

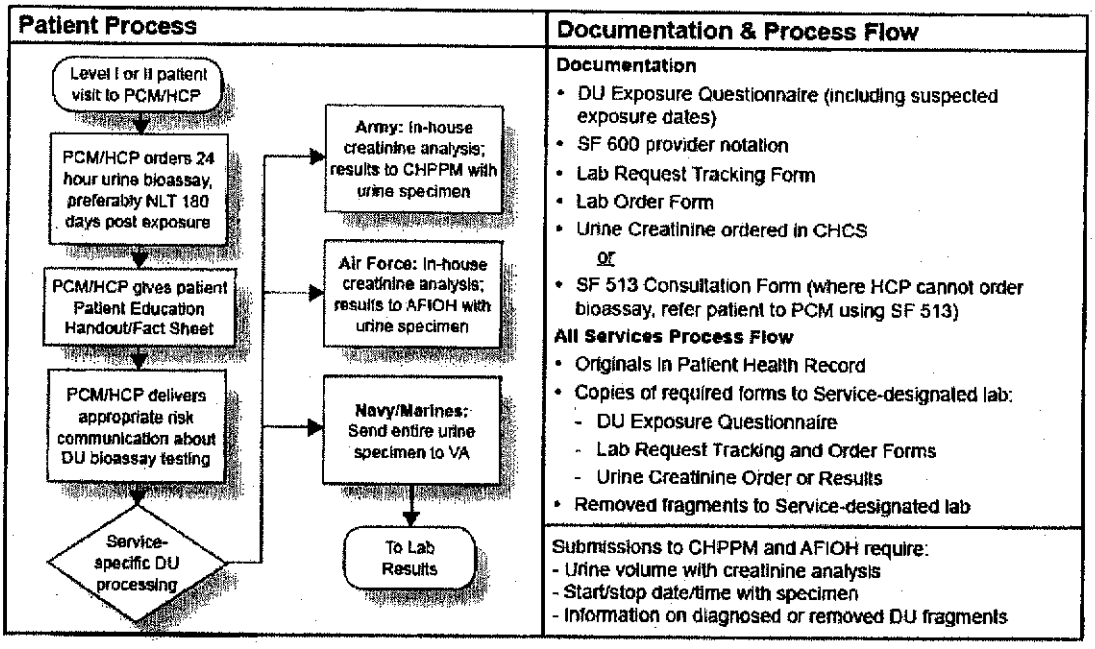
1. **Identification:** Positive responses on DD Form 2796, Questions 14, 17, or 18; or identification with known exposure event or unit. Annotate DD 2796; send to AMSA.
2. **Assessment:** Identified personnel complete DU Exposure Questionnaire. Questionnaire and tracking forms to Service-designated labs; labs send to DHCC.
3. **Triage:** Assign to DU Exposure Level I, II, III, or None.
4. **Level III:** Level III exposures do not require testing unless deemed appropriate by provider based on other information or patient request. Process complete.
5. **Level I & II:** Require 24-hr Urine Uranium Bioassay, including urine creatinine analysis according to Service-specific guidelines.
6. **Lab Results:** Returned to MTF lab and referring provider by processing lab; sent to Service Dosimetry Center and DHCC for archiving.
7. **Results to Patient:** Provider delivers results and risk communication to patient. MTF ensures quality control and patient's receipt of results.
8. **Negative Results:** Results to patient and medical management complete.
9. **Positive Urine Result:** First positive requires second confirmation 24-hr urine and check for fragments, if none previously identified. Second positive requires referral through Service SME and DHCC to VA DU Follow-up Program.
10. **Follow-up and Case Management:** DHCC facilitates referral to VA; narrative summary of care sent from VA to MTF for medical record and to DHCC for case management.

Depleted Uranium Exposure Medical Management Process Flow
Identification, Assessment, and Triage

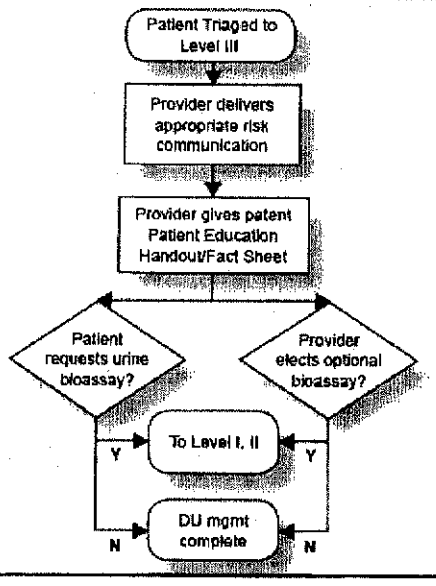
Patient Process	Documentation & Process Flow
	**ICD-9 Coding** **Always use:** • V70.5__6: Post-deployment visit **AND appropriate ICD-9 Codes, including:** • 985.9: Toxic effects of other unspecified metals • E991.9: Injury due to war operations by other and unspecified fragments • E993: Injury due to war operations by other explosion **Documentation** • DD 2796 (record DU level assigned) • DU Exposure Questionnaire (SF 600 Overprint) • Originals in Patient Health Record • Copy of DD 2796 to AMSA • Copy of DU Exposure Questionnaire to Service-designated lab with urine specimen
	PCM: Primary Care Manager HCP: Health Care Provider SME: Subject Matter Expert

Depleted Uranium Exposure Medical Management Process Flow

Level I, II

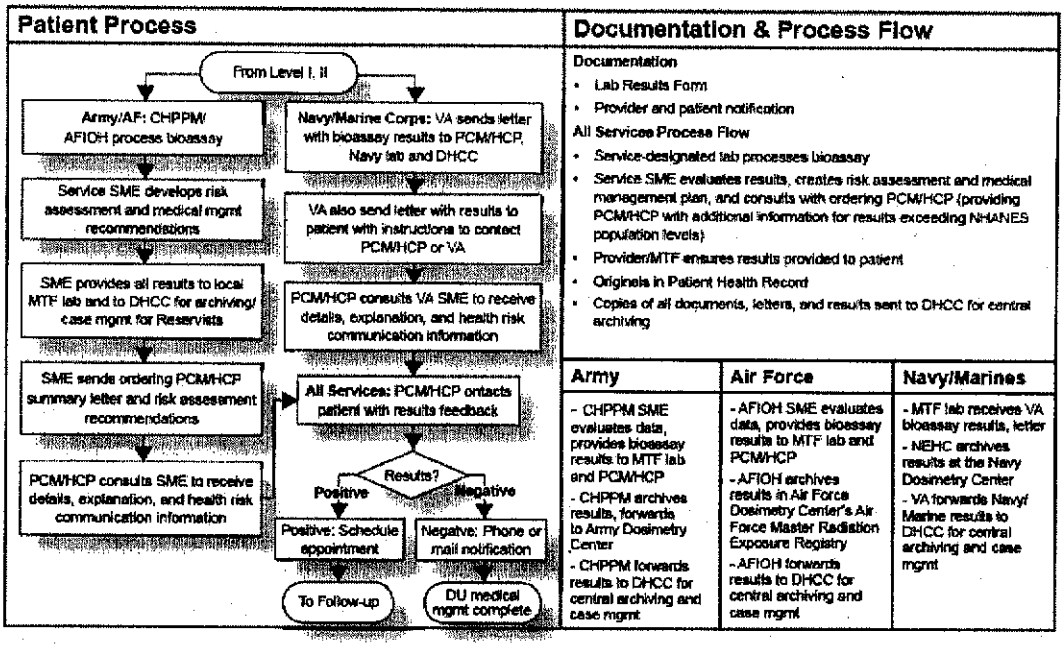


Depleted Uranium Exposure Medical Management Process Flow
Level III

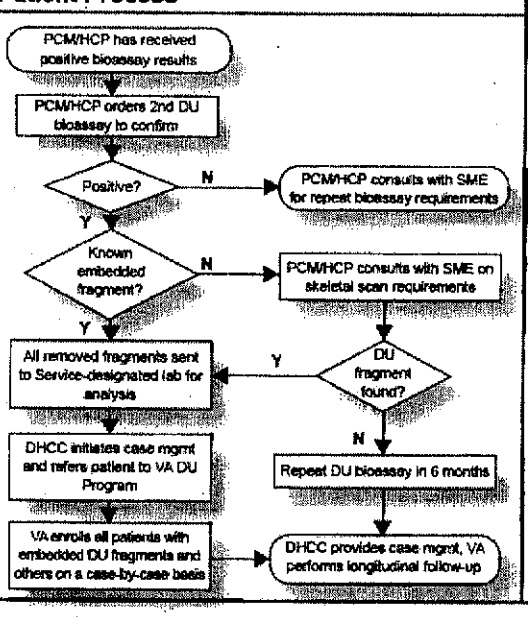
Patient Process	Documentation & Process Flow
	**Documentation** • Complete SF 600 notation • Additional DD 2766 notation, if needed • Additional DD 2796 notation, if needed • Patient Education Handout/Fact Sheet **All Services Process Flow** • Notation on DD 2796 prior to submission to AMSA and patient (record DU level assigned) • Original SF 600 and DD 2796 in Patient Health Record • Copy of DD 2796 to AMSA
	AMSA Bldg T-20, Rm 213 Attn: MCHB-TS-EDM 6900 Georgia Ave., NW Washington, DC 20307-5001 202.782.0471 DSN: 662

Depleted Uranium Exposure Medical Management Process Flow

Lab Results



Depleted Uranium Exposure Medical Management Process Flow
Follow-up

Patient Process	Documentation & Process Flow
	**Documentation** • SF 600 provider notation • SF 600 DU Exposure Form • Lab Request Tracking and Order Forms • Urine Creatinine ordered in CHCS **All Services Process Flow** • Perform a skeletal survey, if required • Originals in Patient Health Record • Copies of required forms to Service-designated lab with urine specimen: - DU Exposure Questionnaire - Lab Request Tracking and Order Forms - Urine Creatinine Order or Results • Fragments sent to Service-designated lab • VA sends follow-up treatment summary documentation to PCM/HCP and DHCC

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